

REMARKS

By this amendment, claim 31 and the drawings are amended to place this application in condition for allowance. According to the Office Action, claims 1, 2, 18-23, 31, 45, and 46 are being considered by the Examiner, and claims 3-17, 24-30, 32-44, and 47-50 are withdrawn from consideration.

Claim 31 is amended to be consistent with claim 1 in terms of the waveform extractor. More particularly, claim 31 clarifies that the operation occurs during each of a succession of fixed-length time windows, just as recited in claim 1. No new matter is introduced by this amendment, and its entry is respectfully requested.

In the Office Action, the Examiner responded to Applicant's traversal of the restriction requirement by making it final, rejected claims 1 and 31 under 35 U.S.C. § 102(b), and raised issues regarding the priority claim, inadequate support in the specification for the claims, and the drawings. This amendment responds to the issues via the headings of CLAIM OF PRIORITY, INADEQUATE SUPPORT FOR THE CLAIMS and PRIOR ART REJECTION. The issues with the drawings are addressed above. The final restriction is addressed in the concurrently filed petition under 37 CFR 1.144.

CLAIM OF PRIORITY

In the Office Action, the Examiner alleges that Figures 13 and 14 are not disclosed in priority document "11-354183". First and presumably, the priority document in question is actually 11-352182. Second, the priority document does in fact disclose the features of Figures 13 and 14. In this regard, Applicants are submitting herewith Figure 6 from the Japanese patent corresponding to the priority document in question, with English translations of the various boxes found in the drawing. As is readily apparent from a review of this drawing, the components found Figure 13 are disclosed in the priority document, and therefore, Applicants' are entitled to claim priority under 35 U.S.C. § 119(e). If the Examiner insists on receiving an English translation of

the priority document, Applicants will produce one, but, under the present circumstances, it is not believed to be necessary.

INADEQUATE SUPPORT FOR THE CLAIMS

In the Office Action, the Examiner alleges that claims 19-26 and 46 as they relate to Species VI are not supported by the specification. More particularly, the Examiner contends that the frequency analysis of claim 1 AND the angular velocity calculation are not described for Figures 13 and 14. This objection should be withdrawn as lacking the proper basis since the specification does support the language of claims 19-26 and 46 when read with claims 1 and 31. In general, the Examiner's attention is directed to pages 40-44 of the specification and the discussion of the sixth embodiment or the alleged Species VI. The Examiner's attention is specifically directed to page 40, lines 15-18, wherein it is stated that the embodiment incorporates the sound source direction estimation section 116 of the preceding embodiments or that which is disclosed in conjunction with Figures 2A, 2B, and 4. This means that Figure 13 clearly includes the frequency analyzer section 104.

Secondly, on page 42, beginning at line 2, it is stated:

The motion interval calculation section 606 then determines ..... the length of time T..... required for the sound source to move through a preset ..... range of successive directions with respect to the microphone array 102.....

The velocity detection at which the sound source is moving, based on (a fixed angular amount) and the value obtained for T ..... The latter corresponds to the third of the sequence of processing steps shown in the flow diagram of Figure 14.

Thus, there is in fact proper antecedent basis in the specification for the contents of claims 19-26, and 46, since the "successive directions" of the sound source are provided by the sound source estimation section 116, using the frequency analyzer section 104 and the direction information in the angular velocity calculation. Accordingly, the objection to the specification should be withdrawn.

PRIOR ART REJECTION

The Examiner rejects claims 1 and 31 under 35 U.S.C. § 102(b) on the basis of the admitted prior art as shown in Figure 22 of the drawings. Critical to the Examiner's position is the assertion that the description of Figure 22 includes a "succession of fixed-length time windows dt" when determining the direction of a sound source. However, there is nothing in the description of Figure 22 that supports this allegation, and lacking this description, the rejection based on 35 U.S.C. § 102(b) is fatally defective.

Referring to Figure 22, as a sound source first moves past one of the microphones 901 or 902, the frequency distribution of the resultant received sound is obtained by the frequency analyzer 906. When the sound source then moves past the other microphone (after a variable time interval dt), a similar frequency spectrum will again be obtained. That occurrence of similarity is detected by the comparison circuit 907. The duration of the interval dt thus depends entirely on the speed of the sound source. Therefore, Figure 22 DOES NOT disclose a fixed-length windows dt, nor a succession of such time windows. As noted above, the failure of the admitted prior art to teach each and every element of claims 1 and 31 prevent its use under 35 U.S.C. § 102(b), and the rejection must be withdrawn for this reason alone.

The rejection is also in error in alleging that Figure 22 and its description teach that the output signals are produced "from an array of M(2) microphones (901,902)." The output signals from the microphones 901 and 902 are selected by a changeover circuit 905, i.e., with only one signal at a time being transferred to the circuit 905. This is not an array, wherein the signals from the respective microphones would be processed during the same time interval. Instead, respectively separate analyses are performed by the frequency analyzer circuit 906 of the signal obtained from microphone 901 and of the signal obtained from microphone 902. These microphones are utilized separately and their signals (after frequency analysis) are compared, but are not combined after being analyzed, as is done with the output signal from the frequency analyzer 104

shown in Figures 2A or 4. This is another ground for withdrawing the rejection under 35 U.S.C. § 102(b).

A third reason that the rejection is faulty is the Examiner's position that the changeover circuit 905 constitutes a "waveform extractor means." There is no basis to draw this conclusion since the changeover circuit is simply a selector switch for selectively supplying the signals from the microphones to the frequency analyzer circuit 906. With such a configuration, the system of Figure 22 cannot have "successive sets of M audio signal portions .... corresponding to respective ones of the time windows". This failure also mandates a withdrawal of the rejection based on 35 U.S.C. § 102(b).

A fourth reason why the rejection must be withdrawn is that failure of the Figure 22 system to teach the presence of "a plurality of components corresponding to respectively different ones of a fixed set of frequencies." Figure 22 does not include any means for separating a signal into components within respective ones of a plurality of different frequency bands, e.g., as is done by the waveform extraction selections 1, 2, 3, ...., M in section 103 of Figure 2A of the instant invention. This is yet another deficiency in the admitted prior art that requires withdrawal of the rejection of claims 1 and 31.

Lastly, the allegation that Figure 22 obtains "data expressing a frequency-based direction of a sound source" and "an estimated direction corresponding to one time window" is without a factual basis. In fact, there is no provision for obtaining the direction of the sound source in Figure 22. The Figure 22 system only obtains the velocity of a sound source, based on duration of the time interval  $dt$  and the distance  $L$  between microphones 901 and 902, and the rejection is misplaced in this regard.

Based on the above, it is absolutely clear that the admitted prior art cannot serve as a basis to reject claims 1 and 31 under 35 U.S.C. § 102(b).

Furthermore, there is no reason to arrive at the invention from an obvious standpoint without using hindsight and the Applicants' disclosure as a teaching template. Thus, any rejection based on 35 U.S.C. § 103(a) can only be speculation, and would be improper if made.

Accordingly, claims 1 and 31 are patentably distinguishable from the prior art, and should be passed onto issuance.

In light of the Petition filed with this amendment, claims 1 and 31 are truly generic claims, and Applicant is entitled to a reasonable number of species to be allowed by these claims. Applicants contend that all claims should be allowed based on the Petition submitted herewith. This request is also deemed reasonable in light of the Examiner's comments that the dependent claims would be considered to be included with the generic claims if they are found allowable.

Accordingly, and assuming that the Petition is granted, the Examiner is respectfully requested to examine this application, withdraw the restriction requirement, and pass claims 1-50 onto issuance.

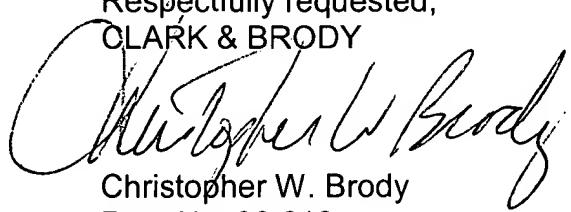
If an interview would expedite the allowance of this application, the Examiner is respectfully requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action of October 11, 2004.

Again, reconsideration and allowance of this application is respectfully solicited.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully requested,  
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